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Lithium on the surface of cool magnetic CP stars. II. Spectrum analysis of HD 83368 and HD 60435 with lithium spots

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Abstract

As a further step in our Lithium project we present results of abundance determination of some elements in the roAp star HD 60435. Possible NLTE effects were considered. Equivalent widths of spectral lines vary with rotational phase which suggests nonuniform distribution of chemical elements over the stars' surface. Large abundance differences derived from various ions of some rare earth elements indicate their possible vertical stratification. Two spots of enhanced lithium abundance were distinguished at the magnetic poles on HD 60435 and their parameters derived. The rotational axis inclination i = 133° or 47° and surface magnetic field Hs = 3±1 kG were determined for the first time for HD 60435. The results are compared with HD 83368, the other star with lines of lithium remarkably variable in intensity and wavelength.

Keywords

Stars: abundances, Stars: chemically peculiar, Stars: individual: HD 83368, HD 60435, Stars: magnetic field